

37 C.F.R. § 1.136(a), and any fees required therefor (including fees for net addition of claims) are hereby authorized to be charged to our Deposit Account No. 19-0036.

*Amendments*

*In the Claims:*

Please add the following new claims:

34. (New) The nucleic acid marker ladder of claim 15, wherein said ladder is stained with ethidium bromide.

35. (New) The nucleic acid marker ladder of claim 15, wherein said size of said at least 3 nucleic acid fragments is 100, 200 and 300 base pairs.

36. (New) The nucleic acid marker ladder of claim 15, wherein said size of said at least 3 nucleic acid fragments is 500, 1000 and 2000 base pairs.

37. (New) A nucleic acid marker ladder comprising:

- C1
- (a) at least 3 nucleic acid fragments resulting from a complete digestion of one or more nucleic acid molecules with one or more restriction endonucleases; and
  - (b) the size of said at least 3 nucleic acid fragments in base pairs is a multiple of an integer with respect to at least one of said at least 3 nucleic acid fragments.

38. (New) The nucleic acid marker ladder of claim 37, wherein said integer is 10 or more.

39. (New) The nucleic acid marker ladder of claim 38, wherein said integer is 10.

40. (New) The nucleic acid marker ladder of claim 38, wherein said integer is 25.

41. (New) The nucleic acid marker ladder of claim 38, wherein said integer is 50.

42. (New) The nucleic acid marker ladder of claim 38, wherein said integer is 100.

43. (New) The nucleic acid marker ladder of claim 37, wherein said size of said at least 3 nucleic acid fragments is 100, 200 and 300 base pairs.

44. (New) The nucleic acid marker ladder of claim 37, wherein said size of said at least 3 nucleic acid fragments is 500, 1000 and 2000 base pairs.

45. (New) The nucleic acid marker ladder of claim 37, wherein said ladder is stained with ethidium bromide.

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continued

46. (New) A nucleic acid marker kit comprising a carrier having in close confinement therein at least one container wherein a first container comprises a nucleic acid marker ladder comprising at least 3 nucleic acid fragments, wherein

- (a) said at least 3 nucleic acid fragments result from a complete digestion of one or more nucleic acid molecules with one or more restriction endonucleases; and
- (b) the size of said at least 3 nucleic acid fragments in base pairs is a multiple of an integer with respect to at least one of said at least 3 nucleic acid fragments.

47. (New) The nucleic acid marker kit of claim 46, wherein said integer is 10 or more.

48. (New) The nucleic acid marker kit of claim 47, wherein said integer is 10.

49. (New) The nucleic acid marker kit of claim 47, wherein said integer is 25.

50. (New) The nucleic acid marker kit of claim 47, wherein said integer is 50.

51. (New) The nucleic acid marker kit of claim 47, wherein said integer is 100.

52. (New) A nucleic acid marker ladder for determining the approximate mass of a nucleic acid in a sample comprising:

- (a) at least 3 nucleic acid fragments resulting from a complete digestion of one or more nucleic acid molecules with one or more restriction endonucleases; and

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- (b) the size of said at least 3 nucleic acid fragments in base pairs is a multiple of an integer with respect to each other.

53. (New) The nucleic acid marker ladder of claim 52, wherein said integer is 10 or more.

54. (New) The nucleic acid marker ladder of claim 53, wherein said integer is 10.

55. (New) The nucleic acid marker ladder of claim 53, wherein said integer is 25.

56. (New) The nucleic acid marker ladder of claim 53, wherein said integer is 50.

57. (New) The nucleic acid marker ladder of claim 53, wherein said integer is 100.

58. (New) The nucleic acid marker ladder of claim 52, wherein said size of said at least 3 nucleic acid fragments is 100, 200 and 300 base pairs.

59. (New) The nucleic acid marker ladder of claim 52, wherein said size of said at least 3 nucleic acid fragments is 500, 1000 and 2000 base pairs.

60. (New) The nucleic acid marker ladder of claim 52, wherein said ladder is stained with ethidium bromide.

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61. (New) A nucleic acid marker ladder comprising:
- (a) at least 3 nucleic acid fragments resulting from a complete digestion of one or more nucleic acid molecules with one or more restriction endonucleases; and
  - (b) the size of said at least 3 nucleic acid fragments in base pairs is a multiple of an integer with respect to each other.
62. (New) The nucleic acid marker ladder of claim 61, wherein said integer is 10 or more.
63. (New) The nucleic acid marker ladder of claim 62, wherein said integer is 10.
64. (New) The nucleic acid marker ladder of claim 62, wherein said integer is 25.
65. (New) The nucleic acid marker ladder of claim 62, wherein said integer is 50.
66. (New) The nucleic acid marker ladder of claim 62, wherein said integer is 100.
67. (New) The nucleic acid marker ladder of claim 61, wherein said size of said at least 3 nucleic acid fragments is 100, 200 and 300 base pairs.

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Cont'd

68. (New) The nucleic acid marker ladder of claim 61, wherein said size of said at least 3 nucleic acid fragments is 500, 1000 and 2000 base pairs.

69. (New) The nucleic acid marker ladder of claim 61, wherein said ladder is stained with ethidium bromide.

70. (New) A nucleic acid marker ladder for determining the approximate mass of a nucleic acid in a sample, said ladder comprising at least 3 nucleic acid fragments, wherein size of said at least 3 nucleic acid fragments in base pairs is a multiple of an integer with respect to each other.

71. (New) The nucleic acid marker ladder of claim 70, wherein said integer is 10 or more.

72. (New) The nucleic acid marker ladder of claim 71, wherein said integer is 10.

73. (New) The nucleic acid marker ladder of claim 71, wherein said integer is 25.

74. (New) The nucleic acid marker ladder of claim 71, wherein said integer is 50.

75. (New) The nucleic acid marker ladder of claim 71, wherein said integer is 100.

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76. (New) The nucleic acid marker ladder of claim 70, wherein said size of said at least 3 nucleic acid fragments is 100, 200 and 300 base pairs.

77. (New) The nucleic acid marker ladder of claim 70, wherein said size of said at least 3 nucleic acid fragments is 500, 1000 and 2000 base pairs.

78. (New) The nucleic acid marker ladder of claim 70, wherein said ladder is stained with ethidium bromide.

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79. (New) A nucleic acid marker ladder for determining the approximate mass of a nucleic acid in a sample, said ladder comprising a 100 bp nucleic acid fragment, a 200 bp nucleic acid fragment, and a 300 bp nucleic acid fragment, wherein said ladder is stained with ethidium bromide.

80. (New) A nucleic acid marker ladder for determining the approximate mass of a nucleic acid in a sample, said ladder comprising a 500 bp nucleic acid fragment, a 1000 bp nucleic acid fragment, and a 2000 bp nucleic acid fragment, wherein said ladder is stained with ethidium bromide.

81. (New) A nucleic acid marker ladder comprising:

- (a) at least 3 nucleic acid fragments resulting from a complete digestion of one or more nucleic acid molecules with one or more restriction endonucleases; and
- (b) the size of said at least 3 nucleic acid fragments is 100 base pairs, 200 base pairs, and 300 base pairs,

wherein said ladder is stained with ethidium bromide.

C1  
Control

82. (New) A nucleic acid marker ladder comprising:

- (a) at least 3 nucleic acid fragments resulting from a complete digestion of one or more nucleic acid molecules with one or more restriction endonucleases; and
- (b) the size of said at least 3 nucleic acid fragments is 500 base pairs, 1000 base pairs, and 2000 base pairs,

wherein said ladder is stained with ethidium bromide.

Please substitute the following claim 15 for the pending claim 15:

C2

15. (Once Amended) A nucleic acid marker ladder for determining the approximate mass of a nucleic acid in a sample, said ladder comprising at least 3 nucleic acid fragments, wherein the size of each of said at least 3 nucleic acid fragments in base pairs is approximately a multiple of an integer with respect to at least one of said at least 3 nucleic acid fragments.

Please substitute the following claim 23 for the pending claim 23:

C3

23. (Once Amended) A nucleic acid marker kit comprising a carrier having in close confinement therein at least one container where the first container comprises a nucleic acid marker ladder, said ladder comprising at least 3 nucleic acid fragments, wherein the size of each of said at least 3 nucleic acid fragments in base pairs is approximately a multiple of an integer with respect to at least one of said at least 3 nucleic acid fragments.

Please substitute the following claim 31 for the pending claim 31:

C4

31. (Once Amended) A method of preparing a nucleic acid marker ladder comprising:



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(a) generating at least two polymerase chain reaction (PCR) products wherein each product is generated from a template comprising a restriction endonuclease site and a primer comprising the restriction endonuclease site in the template;

(b) joining the PCR products to produce a nucleic acid molecule; and

(c) completely digesting one or more nucleic acid molecules with at least one restriction endonuclease;

wherein a nucleic acid marker ladder is produced which comprises at least 3 nucleic acid fragments, wherein the size of each of said at least 3 nucleic acid fragments in base pairs is approximately a multiple of an integer with respect to at least one of said at least 3 nucleic acid fragments.